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*PCT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): K. OHTSUKA, et al.  
Application No.: 10/516,826  
Filed: December 7, 2004  
Title: METHOD FOR CLARIFYING EXHAUST GAS  
Group: TBD  
Examiner: TBD

**SUBMISSION OF TRANSLATION OF  
INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

January 31, 2005

Sir:

Pursuant to Applicants' duty of disclosure, enclosed please find an English translation of the International Preliminary Examination Report in connection with International (PCT) Application No. PCT/JP2003/006127, filed May 16, 2003. The above-identified application is a National Stage application under 35 USC §371 of No. PCT/JP2003/006127.

Consideration of the enclosed English translation of the International Preliminary Examination Report, upon examination of the above-identified application, is respectfully requested.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to the Antonelli, Terry, Stout & Kraus, LLP

Deposit Account No. 01-2135 (Docket No. 396.44480X00), and please credit any excess fees to such Deposit Account.



Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

A handwritten signature in cursive script, appearing to read "William I. Solomon", written over a horizontal line.

William I. Solomon  
Registration No. 28,565

1300 North Seventeenth Street  
Suite 1800  
Arlington, Va 22209  
Telephone: 703/312-6600  
Fax: 703/312-6666  
WIS/sjg

From the INTERNATIONAL BUREAU

**PCT**NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 72.2)

To:

OHTANI, Tamotsu  
Bridgestone Toranomon BLDG. 6F.  
25-2, Toranomon 3-chome  
Minato-ku, Tokyo 105-0001  
JAPON

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Date of mailing ( <i>day/month/year</i> ) 29 December 2004 (29.12.2004)	
Applicant's or agent's file reference FMN-1103	IMPORTANT NOTIFICATION
International application No. PCT/JP2003/006127	International filing date ( <i>day/month/year</i> ) 16 May 2003 (16.05.2003)
Applicant JAPAN PIONICS CO., LTD. et al	

## 1. Transmittal of the translation to the applicant.

The International Bureau transmits herewith a copy of the English translation made by the International Bureau of the international preliminary examination report established by the International Preliminary Examining Authority.

## 2. Transmittal of the copy of the translation to the elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following elected Offices requiring such translation:

CN, EP, KR

The following elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

US

## 3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report.

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Yoshiko Kuwahara

Facsimile No. +41 22 740 14 35

Facsimile No. +41 22 338 90 90

Translation

PATENT COOPERATION TREATY

PCT/JP2003/006127



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference FMN-1103	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP2003/006127	International filing date (day/month/year)* 16 May 2003 (16.05.2003)	Priority date (day/month/year) 07 June 2002 (07.06.2002)
International Patent Classification (IPC) or national classification and IPC B01D 53/56, 53/94, 53/86, 53/72		
Applicant JAPAN PIONICS CO., LTD.		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p>
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>

Date of submission of the demand 09 October 2003 (09.10.2003)	Date of completion of this report 25 February 2004 (25.02.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP2003/006127

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP03/06127

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	3-5, 9-13, 15-17	YES
	Claims	1, 2, 6-8, 14, 18	NO
Inventive step (IS)	Claims	3-5, 9-13, 15-17	YES
	Claims	1, 2, 6-8, 14, 18	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims		NO

### 2. Citations and explanations

Document 1: JP, 7-185344, A (Nissan Motor Co., Ltd.), 25 July, 1995 (25.07.95)

#### Claims 1, 2, 6-8, 14 and 18

The subject matters of claims 1, 2, 6-8, 14 and 18 do not appear to be novel or to involve an inventive step in view of the invention described in document 1 cited in the ISR. Document 1 describes an exhaust gas cleaning method in which the exhaust gas (containing nitrogen oxides and hydrocarbons) emitted from an internal combustion engine is brought into contact with a catalyst (cleaning agent) with palladium loaded in alumina at 500°C, for reducing the nitrogen oxides and oxidizing the hydrocarbons (see page 3, right column, lines 43-50). Furthermore, the document describes that the said palladium is a mixture consisting of metal palladium and palladium oxide (page 2, right column, lines 29-41). Moreover, the document also describes that the deterioration degree of the catalyst, i.e., the ratio of the said palladium to metal palladium or the treated amount of the exhaust gas is indirectly detected to make the air-fuel ratio leaner (to have more air introduced) (page 4, left column, line 20 to right column, line 9).

#### Claims 3-5

None of the documents cited in the ISR describes that the change in the constitution ratio between a reducing cleaning agent ingredient and an oxidizing cleaning agent ingredient is detected in reference to (1) a sampled gas, (2) the discoloration of a detecting agent, or (3) the change in the electrical resistance of the cleaning agent. This constitution is not considered to be obvious to a person skilled in the art either.

#### Claims 9, 11, 13 and 15

Converting a lower valent metal oxide into a higher valent metal oxide is neither described in any of the documents cited in the ISR nor obvious to a person skilled in the art.

#### Claims 10 and 12

Using a correction gas for reducing a metal oxide is neither described in any of the documents cited in the ISR nor obvious to a person skilled in the art.

#### Claims 16 and 17

Using a metal and a metal oxide other than palladium as a cleaning agent is neither described in any of the documents cited in the ISR nor obvious to a person skilled in the art.